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EVALUATION OF WINTER SOUTHERN PINE BEETLE INFESTATIONS
ON THE OAKMULGEE AND SHOAL CREEK RANGER DISTRICTS,
TALLADEGA NATIONAL FOREST, ALABAMA

by

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INTRODUCTION

Aerial sketch map surveys and ground examinations were conducted on the Oakmulgee District (320,000 acres) and the Shoal Creek District (195,000 acres) during January 1975. The survey was performed by the Forest Pest Management Group to determine the current status and trend of southern pine beetle populations on the Districts.

The southern pine beetle infestations on these Districts are part of the southwide outbreak involving 10 states. The current outbreak was first observed on this Forest in 1972.

METHODS

A 50 percent aerial sketch map survey^{1/} was performed in evaluating the winter status of the southern pine beetle population.

A portion of the spots detected during the aerial phase of the evaluation was examined on the ground to determine the cause of mortality, the percent of spots that were active, and to assess the general condition of beetle populations.

TECHNICAL INFORMATION

Insect - Southern pine beetle, *Dendroctonus frontalis*, Zimm.

Hosts - The southern pine beetle will attack all species of southern yellow pine. However, loblolly pine, *Pinus taeda* L., and shortleaf pine, *P. echinata* Mill., are the preferred hosts.

^{1/} Detection of Forest Pests in the Southeast, 1970, USDA, USFS, SA, S&PF, Div. of FPM, Publ. S&PF-7, Atlanta, Ga. 51 pp.

Type of Damage - Death of the tree is the result of cambial mining by the southern pine beetle as it constructs its gallery. The beetle also introduces the blue stain fungi, *Ceratocystis* spp., which slows down or blocks conduction of water in the stem.

Life cycle of the beetle - The beetles attack in pairs and construct a winding gallery in the cambium. Eggs are deposited in niches along the sides of the galleries. The eggs hatch into whitish grubs that further mine the cambium and then construct cells in the bark for pupation. The callow adults then mine through the bark to emerge. The complete life cycle takes about a month during the summer, and as many as seven generations may be produced a year.

Heaviest infestation areas appear to be located in the central part of the southern half of the Oakmulgee Ranger District (Fig. 1) and in the southern and northern portions of the Shoal Creek Ranger District (Fig. 2).

RESULTS AND DISCUSSION

The southern pine beetle population is presently at a low level on both Districts (less than one spot per M acres of host type).

These evaluations were conducted in January, therefore, it must be remembered that the results of this report are merely a reflection of the southern pine beetle activity during the winter months. This should not be interpreted as the true level of southern pine beetle activity, as it tends to increase in the summer and decrease during winter months. Figures 3a and 3b show the trend of southern pine beetle levels on the Oakmulgee and Shoal Creek Ranger Districts for the past two years.

Tables 1 and 2 summarize the results of the evaluation for each of the Districts.

REFERENCES

- Aldrich, R. C., R. C. Heller, and W. F. Bailey, 1958. Observation limits for aerial sketch mapping southern pine beetle data in the Southern Appalachians. J. For. 56(3):200-202.
- Regenovich, I. R. and J. F. Denniston, 1974. Evaluation of the Southern Pine Beetle Infestations on the Talladega Division, Talladega National Forest, Alabama. USDA, For. Serv., SA, S&PF, Forest Pest Mgmt. Group, Rept. No. 75-2-1.

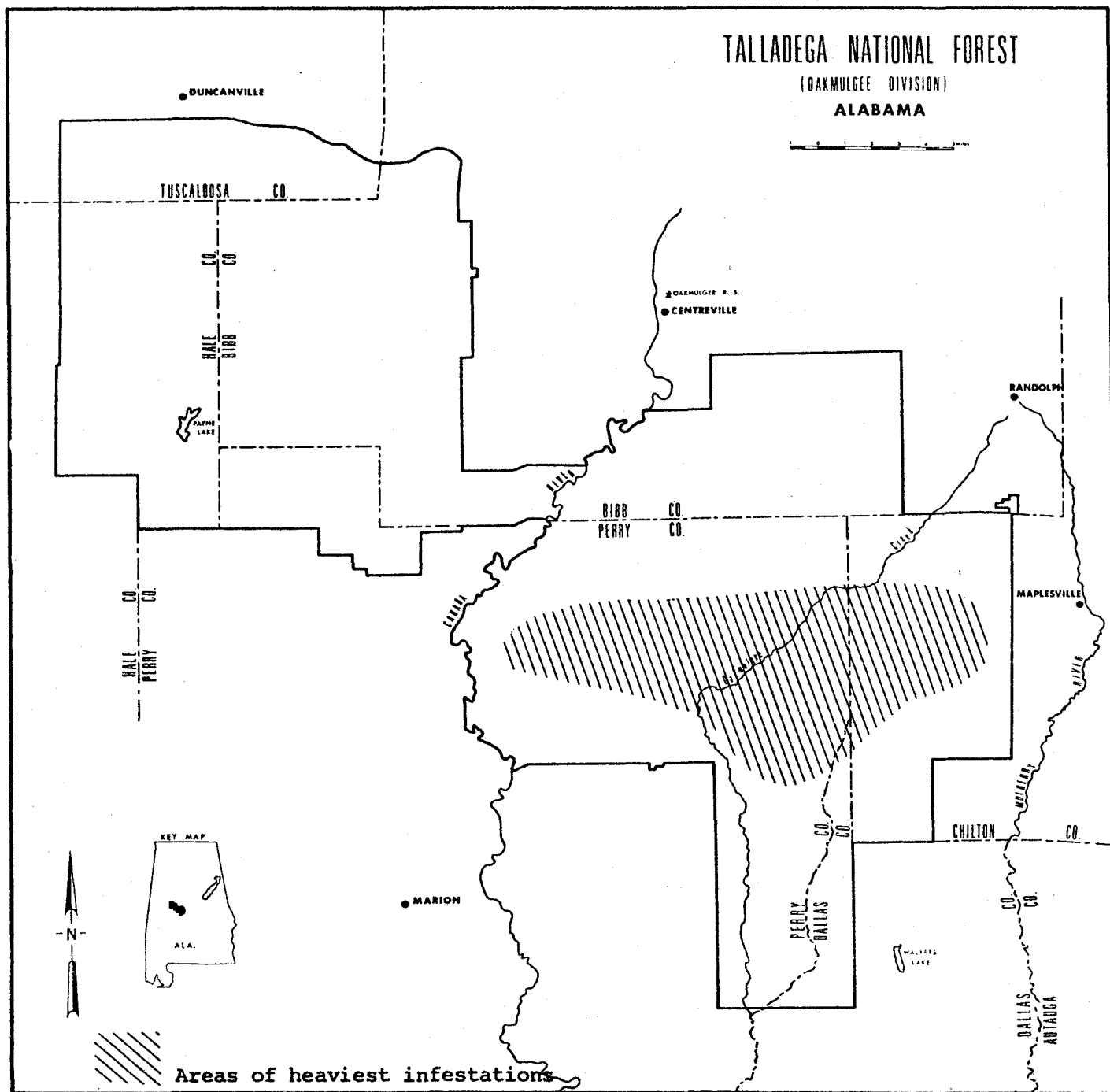


Figure 1. Map showing area surveyed in southern pine beetle evaluation, Oakmulgee Ranger District, Talladega National Forest, Alabama, January 1975.

A horizontal scale bar with markings at 0, 1, 2, 3, 4, 5, 10, and 15 Miles.

• • • • Ranger District boundary.

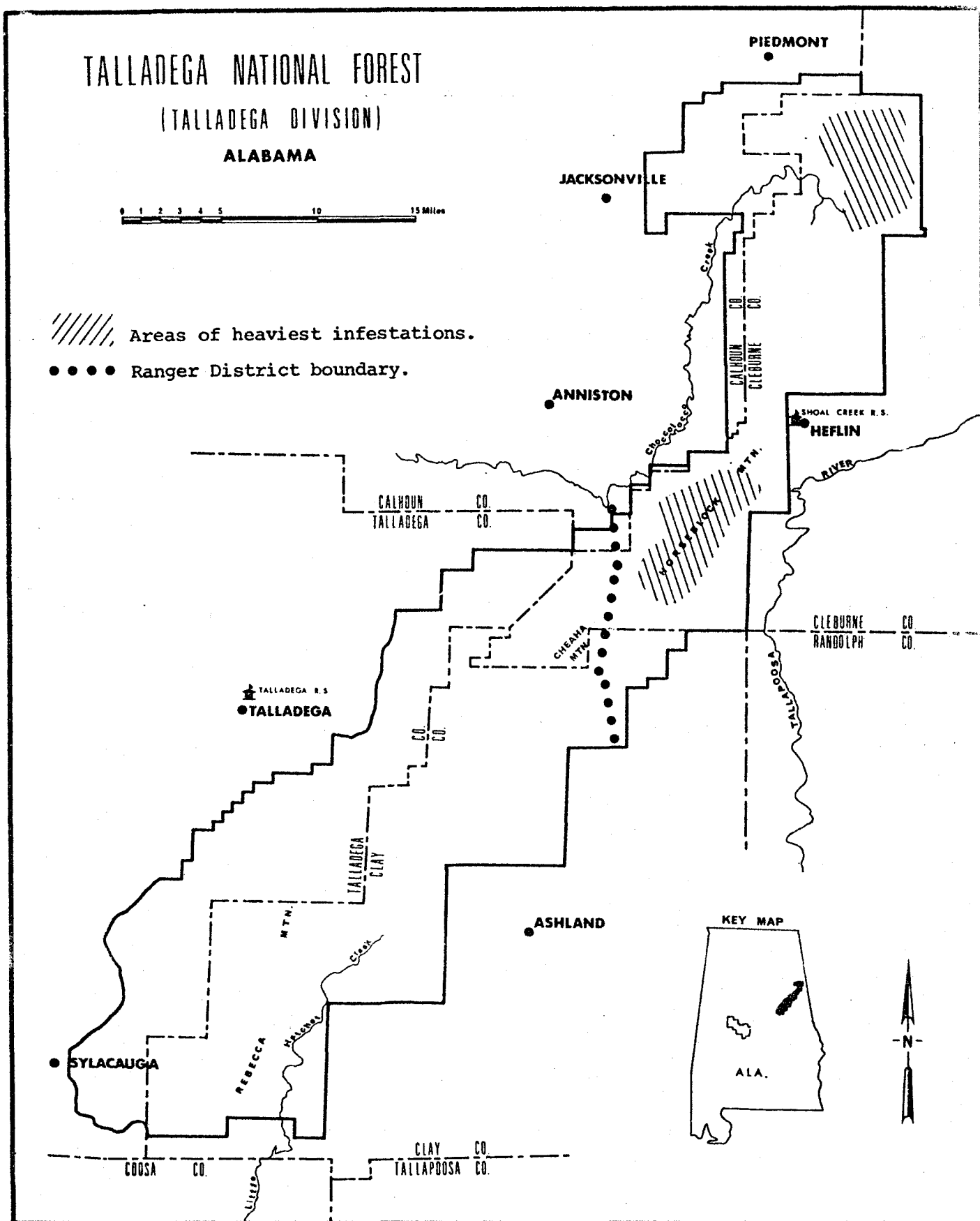


Figure 2. Map showing area surveyed in southern pine beetle evaluation, Shoal Creek Ranger District, Talladega N.F., Alabama, Jan. 1975.

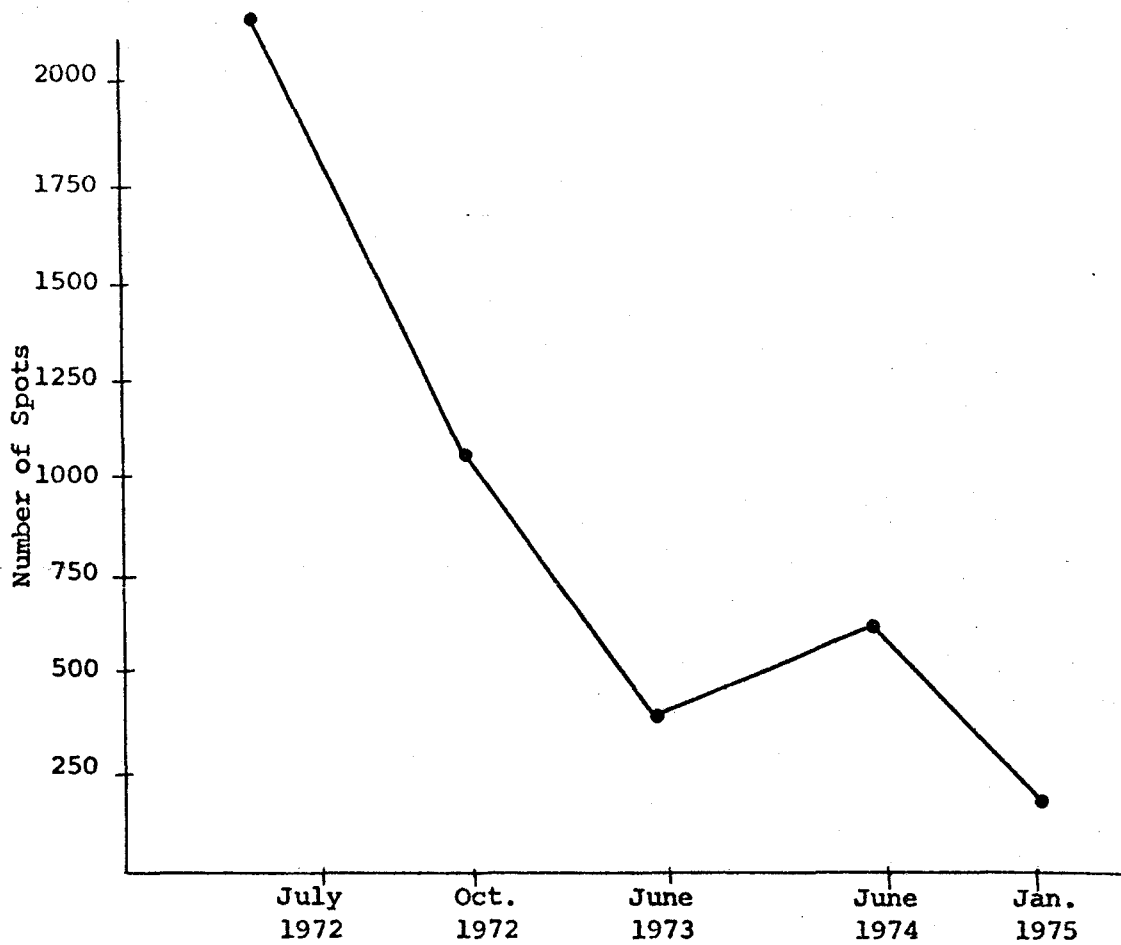


Figure 3a. Illustration of the trend of southern pine beetle infestation levels on the Oakmulgee Ranger District, Talladega National Forest, Alabama 1975.

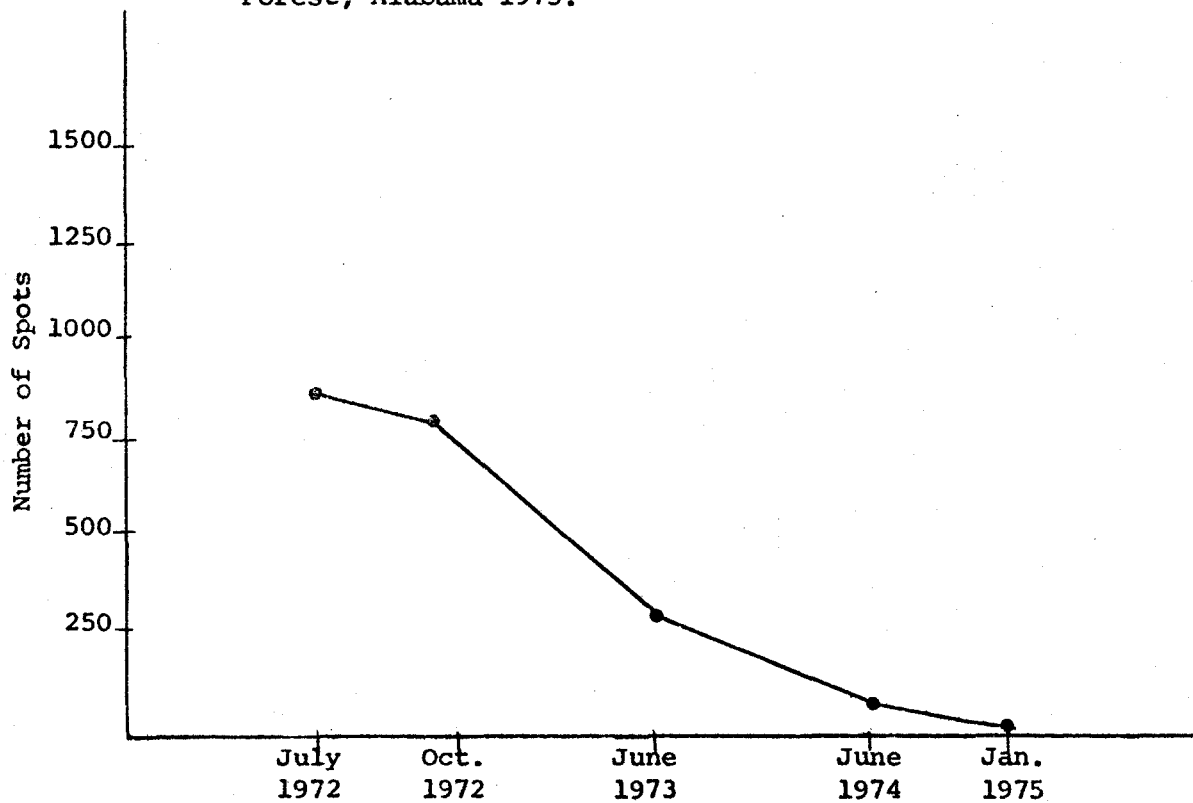


Figure 3b. Illustration of the trend of southern pine beetle infestation levels on the Shoal Creek Ranger District, Talladega National Forest, Alabama, 1975.

Table 1.--Summary of the results of a southern pine beetle evaluation conducted on the Oakmulgee and Shoal Creek Ranger Districts, Talladega National Forest, Alabama, January 1975.

	Oakmulgee R.D.	Shoal Creek R.D.
1. Results compiled from data collected during the aerial phase of the evaluation		
Survey Type	Sketch Map	Sketch Map
Date of Survey	January 13, 1975	January 6, 1975
Percent Survey	50	50
Total Acreage Surveyed	330,000	195,000
Total Susceptible Host Type Acreage	217,600	95,596
Total Number of Spots Within Survey Boundary	201	52
Spots Per M Acres of Host Type	0.93	0.55
Average Spot Size (Trees)	2.71	4.44
Range of Spot Sizes (Trees)	1-20	1-18
Reds and Faders Per M Acres of Host Type	2.51	2.43
2. Results compiled from data collected during ground and aerial phases of the evaluation		
Date of Ground Phase	January 14, 1975	January 7, 1975
Infested Trees Per M Acres Host Type	1.51	0.00
Total Number of Infested Trees	329	0
Total Number of Affected Trees	396	78
Infested Green to Infested Red Tree Ratio	1.0:1	0.0:1
Volume of Infested Pulp	6.6 CCF	0.0 CCF
Volume of Infested Sawtimber	2.3 MBF	0.0 MBF
Volume of Affected Pulp	7.8 CCF	0.0 CCF
Volume of Affected Sawtimber	5.4 MBF	6.0 MBF

Table 2.--Summary of the aerial survey data - southern pine beetle evaluation on the Oakmulgee and Shoal Creek Ranger Districts, Talladega National Forest, Alabama, January 1975^{1/}

Ownership	Infestation Size (No. of Trees)												Average Mult. Tree Spot Size	
	Singles	2-5		6-20		21-50		51-100		100+		Total		
	Spots-Trees	Spots-Trees	Spots-Trees	Spots-Trees	Spots-Trees	Spots-Trees	Spots-Trees	Spots-Trees	Spots-Trees	Spots-Trees	Spots-Trees	Spots-Trees	Spots-Trees	Spots-Trees
Oakmulgee R. D.	133	42	138	26	274	0	0	0	0	0	0	201	546	6.05
Shoal Creek R. D.	13	26	96	13	123	0	0	0	0	0	0	52	233	5.61

^{1/} Corrected according to data by Aldrich et al. (1958); expanded to 100 percent survey area coverage.

Terry, J. R. and L. M. Moore, 1974. Evaluation of the Southern Pine Beetle Infestations on the Oakmulgee District, Talladega National Forest, Alabama. USDA, For. Serv., SA, S&PF, Forest Pest Mgmt. Group, Rept. No. 75-2-2.